AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A motor control apparatus comprising:

an encoder for producing a pulse signal in synchronism with rotation of a rotor of a motor that rotates a control object;

an encoder ~~counting means~~ counter for counting a count of the pulse signal of the encoder as an encoder count;

~~control means~~ a controller for sequentially switching a current supply phase of the motor to rotate the rotor to a target position during a feedback control of the motor by detecting a rotation position of the rotor on the basis of the encoder count;

a first current supply phase ~~setting means~~ setter for setting the current supply phase on the basis of the encoder count in synchronism with pulses of the pulse signal of the encoder during the feedback control of the motor;

a second current supply phase ~~setting means~~ setter for setting the current supply phase on the basis of the encoder count in a prescribed cycle by time-synchronous processing until the rotor is rotated to the target position;

a current supply ~~control means~~ controller for causing, every time the current supply phase is set by each of the first and second current supply phase ~~setting means~~setter, a current to flow through a winding of the thus-set current supply phase;

a reversing ~~detecting means~~ detector for detecting reversing of a rotation direction of the rotor occurring on its way to the target position; and

a current supply phase ~~holding means~~ holder for fixing the current supply phase for which current supply is effected by the current supply ~~control means~~ controller to a preceding current supply phase when the reversing ~~detecting means~~ detector has detected reversing.

2. (currently amended) The motor control apparatus according to claim 1, wherein:

the encoder ~~counting means~~ counter switches between increase and decrease of the encoder count in response to switching between normal rotation and reverse rotation of the rotor; and

the reversing ~~detecting means~~ detector determines whether reserving has occurred by storing, with updating, a maximum value of the encoder count and comparing a present encoder count with the maximum value when the rotor is being rotated in a direction that the encoder count is increased, and determines whether reserving has occurred by storing, with updating, a minimum value of the encoder count and comparing the present encoder count with the minimum value when the rotor is being rotated in such a direction that the encoder count is decreased.

3. (currently amended) The motor control apparatus according to claim 2, wherein the reversing ~~detecting means~~ detector sets, in determining whether reversing has occurred by comparing the present encoder count with the maximum value or the minimum value, a dead zone of a prescribed count for the maximum value or the minimum value and does not determine in the dead zone that reversing has occurred.

4. (currently amended) The motor control apparatus according to claim 1, further comprising:

an open-loop ~~driving means~~ driver for switching to an open-loop control if the current supply phase ~~holding means~~ holder has detected a state that the current supply phase is fixed, sequentially switching the current supply phase of the motor without feeding back information of the encoder count, counting the number of times of current supply phase switching, and rotates the rotor to the target position on the basis of the counted number of times of current supply phase switching.

5. (original) The motor control apparatus according to claim 2, wherein at a start of the feedback control an encoder count at that time is set as an initial value of the maximum value or the minimum value.

6. (original) The motor control apparatus according to claim 1, wherein the motor is a switched reluctance motor.

7. (original) The motor control apparatus according to claim 1, wherein the motor drives a position switching mechanism for switching a position of an automatic transmission of a vehicle.

8. (currently amended) A motor control apparatus comprising:

an encoder for producing a pulse signal in synchronism with rotation of a rotor of a motor that rotates a control object;

~~control means~~ a controller for performing a feedback control for rotating the rotor to a target position by detecting a rotation position of the rotor on the basis of a count of the pulse signal of the encoder as an encoder count, and sequentially switching a current supply phase of the motor; and

a disconnection ~~detecting means~~ detector for detecting, for each phase, a disconnection in a winding of each phase of the motor,

wherein if the disconnection ~~detecting means~~ detector has detected a disconnection in a winding of one phase when the feedback control is started, the ~~control means~~ controller sets at least first two current supply phases to phases for which no disconnection is detected~~.~~; and

the controller sets, determining from a predetermined switching order of the current supply phases as the first current supply phase, a phase to which switching should be made from the disconnection-detected phase, if the disconnection detector has detected a disconnection in a winding of one phase when the feedback control is started.

9. (currently amended) The motor control apparatus according to claim 8, wherein the ~~control means~~ controller prohibits current supply to the motor and causes an alarm display ~~means~~ to display an alarm message, if the disconnection ~~detecting means~~ detector has detected disconnections in windings of two or more phases.

10. (canceled)

11. (currently amended) The motor control apparatus according to claim 8, wherein when the feedback control is started, the ~~control means~~ controller starts the feedback control to execute a feedback control start position stopping and holding process for holding the rotor at a feedback control start position by effecting current supply for the first current supply phase for a prescribed time and to rotate the rotor thereafter by switching the energization phase.

12. (currently amended) The motor control apparatus according to claim 11, wherein if the disconnection ~~detecting means~~ detector has detected a disconnection in a winding of one phase, the ~~control means~~ controller sets a time of the feedback control start position stopping and holding process longer than in an ordinary case.

13. (original) The motor control apparatus according to claim 8, wherein the motor is driven by one system of drive coil in which windings of respective phases are connected to each other.

14. (original) The motor control apparatus according to claim 8, wherein the motor is a switched reluctance motor.

15. (original) The motor control apparatus according to claim 8, wherein the motor drives a position switching mechanism for switching a position of an automatic transmission of a vehicle.

16. (new) A motor control apparatus comprising:

an encoder for producing a pulse signal in synchronism with rotation of a rotor of a motor that rotates a control object;

a controller for performing a feedback control for rotating the rotor to a target position by detecting a rotation position of the rotor on the basis of a count of the pulse signal of the encoder as an encoder count, and sequentially switching a current supply phase of the motor; and

a disconnection detector for detecting, for each phase, a disconnection in a winding of each phase of the motor,

wherein if the disconnection detector has detected a disconnection in a winding of one phase when the feedback control is started, the controller sets at least first two current supply phases to phases for which no disconnection is detected; and

the controller prohibits current supply to the motor and causes an alarm display to display an alarm message, if the disconnection detector has detected disconnections in windings of two or more phases.

17. (new) The motor control apparatus according to claim 8, wherein setting the phase to which switching should be made from the disconnection-detected phase maximizes the number of times that current supply phase switching is performed until the disconnection detected phase is selected as a current supply phase after feedback control is started.